



**Conférence Parmenides IX – GID-CIHEAM – Bari – octobre 2021**  
**Gestion durable des bassins versants méditerranéens face aux impacts des changements**  
**sociétaux et climatiques**

Alberto Montanari

The circles of sustainability approach along with its advantages and related open challenges,  
by referring to Italian and international examples of urban planning.

Summary

Sustainability is key for equitable societal development, as it outlines the emerging necessity of reaching a compromise among competing human aspirations. In fact, the modern view of sustainability considers these aspirations as parts of a dynamical system. Accordingly, sustainability is defined through three interconnected domains or pillars: environmental, economic and social. The key concept is that the above pillars have been recognized as not mutually exclusive but rather mutually reinforcing. In fact, the three pillars are interdependent, and in the long run none can exist without the others (see Figure 1).

The key question is how to ensure that the above mutual interaction takes place efficiently. It requires an intensive and productive dialogue between institutions, stakeholders, policy makers and the public. In fact, the earlier approaches to sustainability and sustainable development were initially criticized for giving more weight to the economic with respect to the environmental pillar. Therefore, the United Nations proposed in 2008 the use of an approach based on “engaged theory” to understand social complexity, which found an empirical dimension with the “circles of sustainability”. The latter is a method for managing projects aiming at a socially sustainable outcome.

The Circles of Sustainability provides a relatively simple view of the sustainability of a particular project or spatial domain. The circular figure is divided into four sectors: ecology, economics, politics and culture. Each of these four sectors is divided into seven subsectors. The sustainability of each of the 28 subsectors is evaluated over a scale of 9 marks, ranging from “critical sustainability” to “vibrant sustainability”. Figure 2 reports an example of circles of sustainability for the city of Melbourne.

The method provides a transparent view of the sustainability of multiple sectors and therefore makes the interaction between different actors more efficient and productive, by identifying specific areas that require more attention and therefore more weight into the considered system. Circles of sustainability are an excellent aid to build dynamical models of the system itself, that can be used to generate future scenarios.

To provide an example, several contributions have identified technical guidelines for the design of climate change adaptation strategies basing on the goals to be achieved in each of the

subsectors identified within the circles of sustainability approach. Practical experience has shown that decision support systems based on graphical tools help to achieve transparency, equity and inclusivity.

The present contribution will present the circles of sustainability approach along with its advantages and related open challenges, by referring to Italian and international examples of urban planning.

References: James, P. (2014). Urban sustainability in theory and practice: circles of sustainability. Routledge.

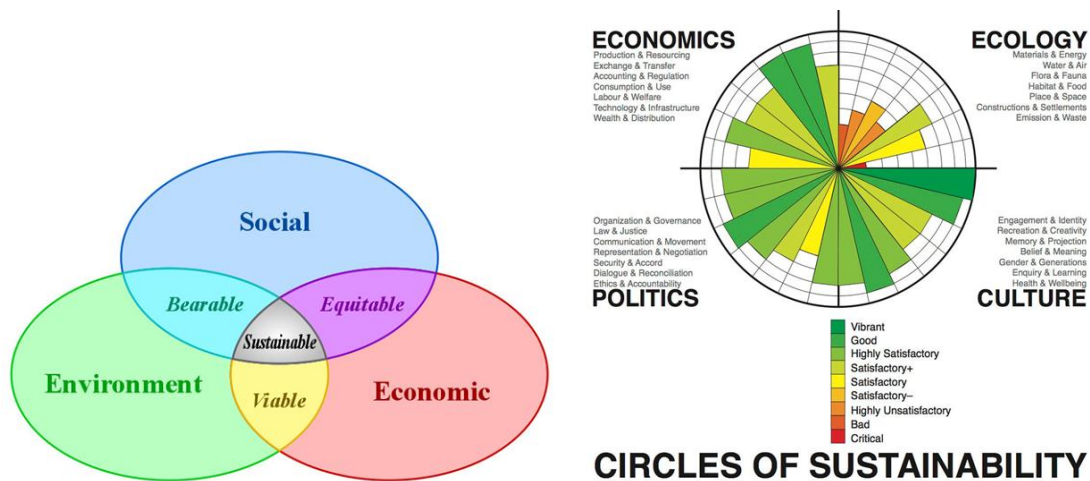


Figure 1. The three pillars of sustainability and their intersection. CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1587372>

Figure 2. Circles of sustainability for the city of Melbourne. CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=22537829>



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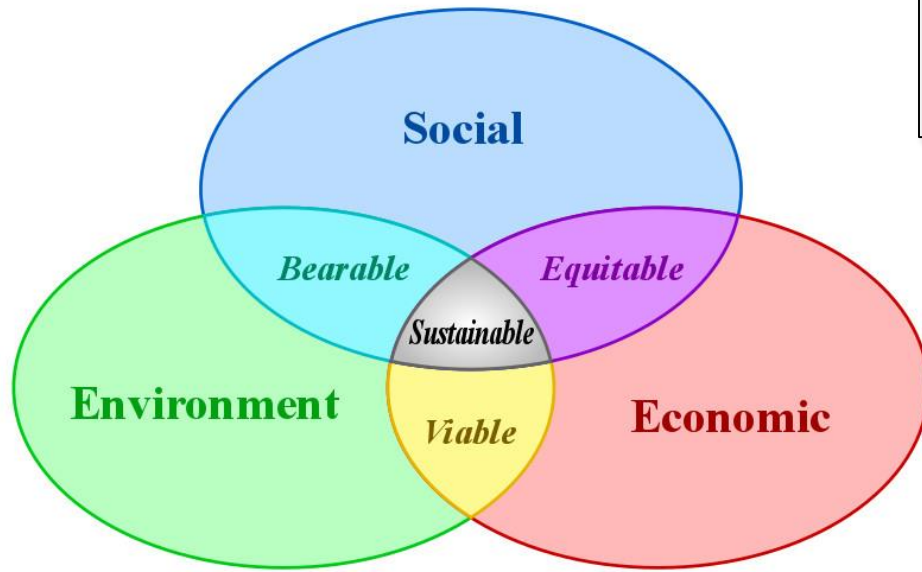
# Circles of sustainability to promote a dynamic and sustainable governance model in the face of climate change

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# A forward looking view on sustainability



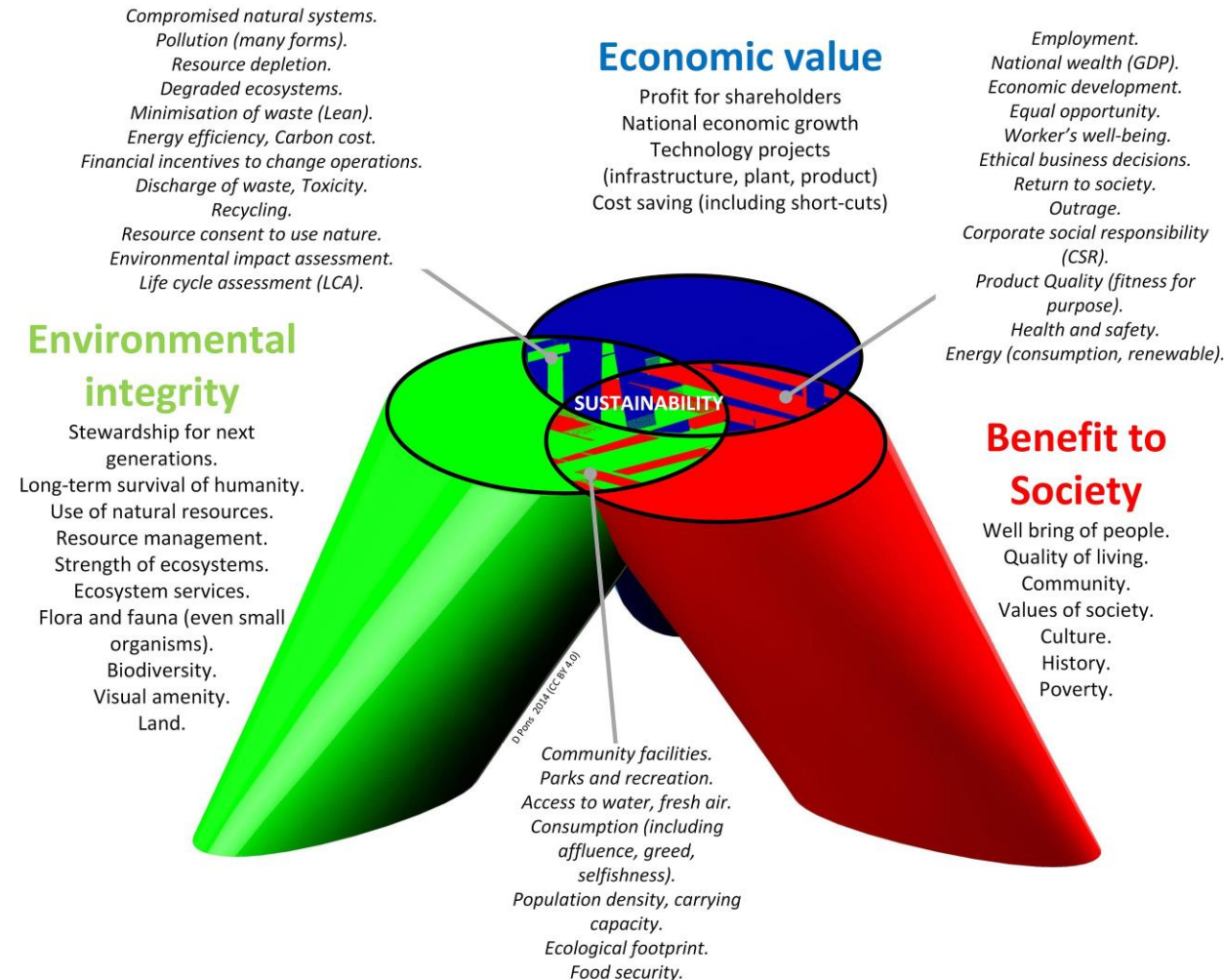
The three pillars of sustainability and their intersection.

Left: CC BY-SA 3.0 <https://commons.wikimedia.org/w/index.php?curid=1587372>

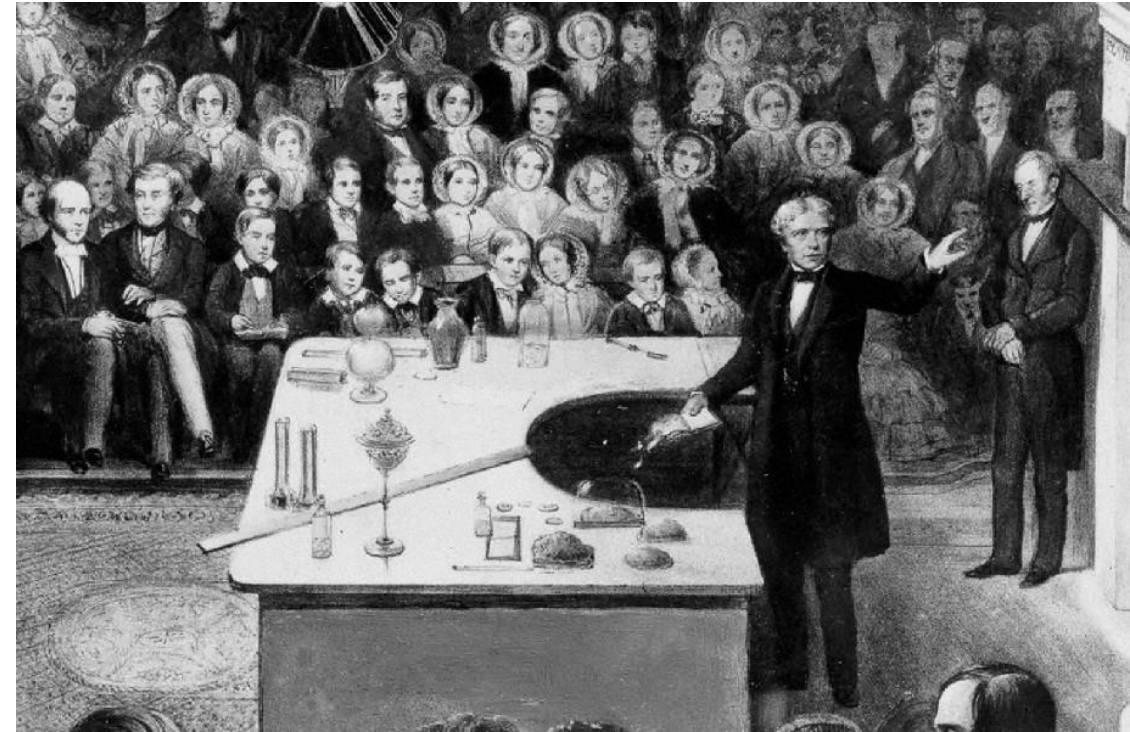
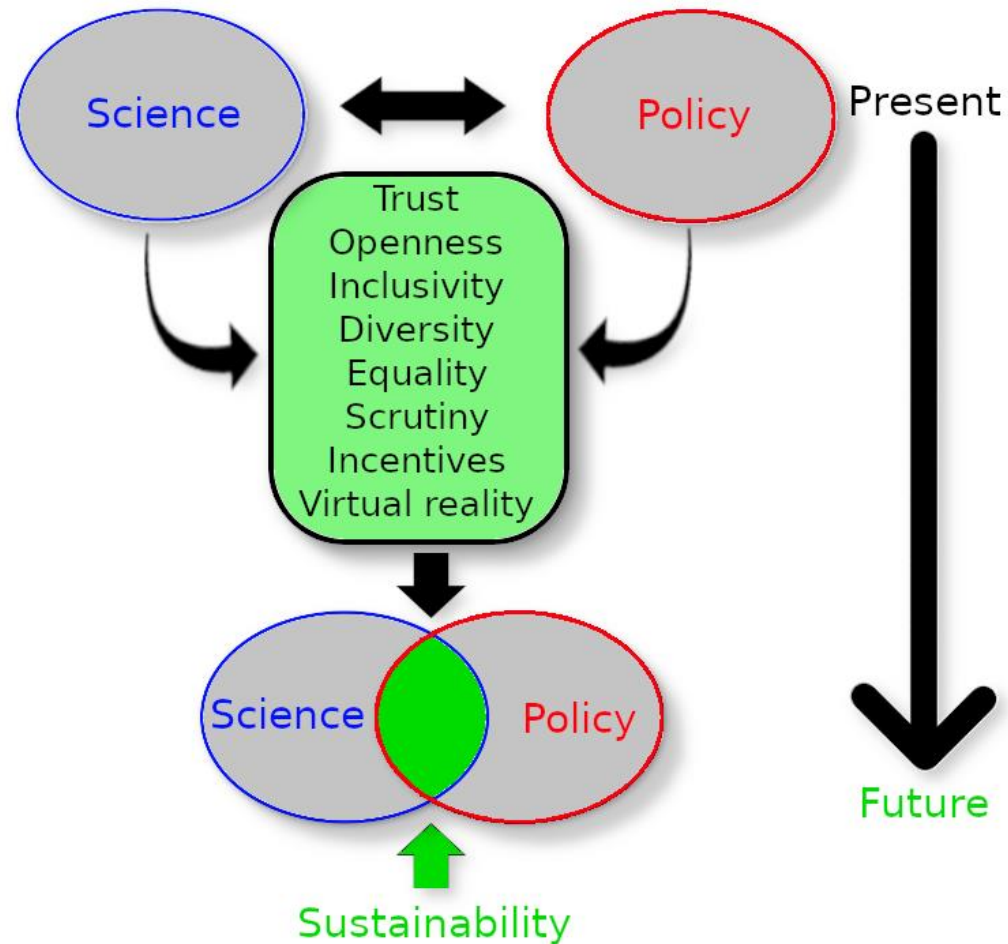
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Sustainability requires a compromise between competing human aspirations.

**Key question: how to reach the compromise?**



# Establishing a productive dialogue between scientists and policy makers. A well known challenge



Michael Faraday giving a Christmas Lecture at the Royal Institution (circa 1855). By Alexander Blaikley (1816 - 1903), Public domain, via Wikimedia Commons



# Transdisciplinarity, Openness, Diversity and Inclusivity

- Multidisciplinarity, interdisciplinarity, transdisciplinarity!
- Open data, open software, open science!
- New disciplines and data without boundaries are the key to sustainability.
- Diversity of interpretations, objectivity of science, considering and challenging scientific advice are essential ingredients.
- “Accountability in a democracy depends on elected decision-makers not just taking advice, but examining, questioning and challenging it before making their own decisions.” [1]



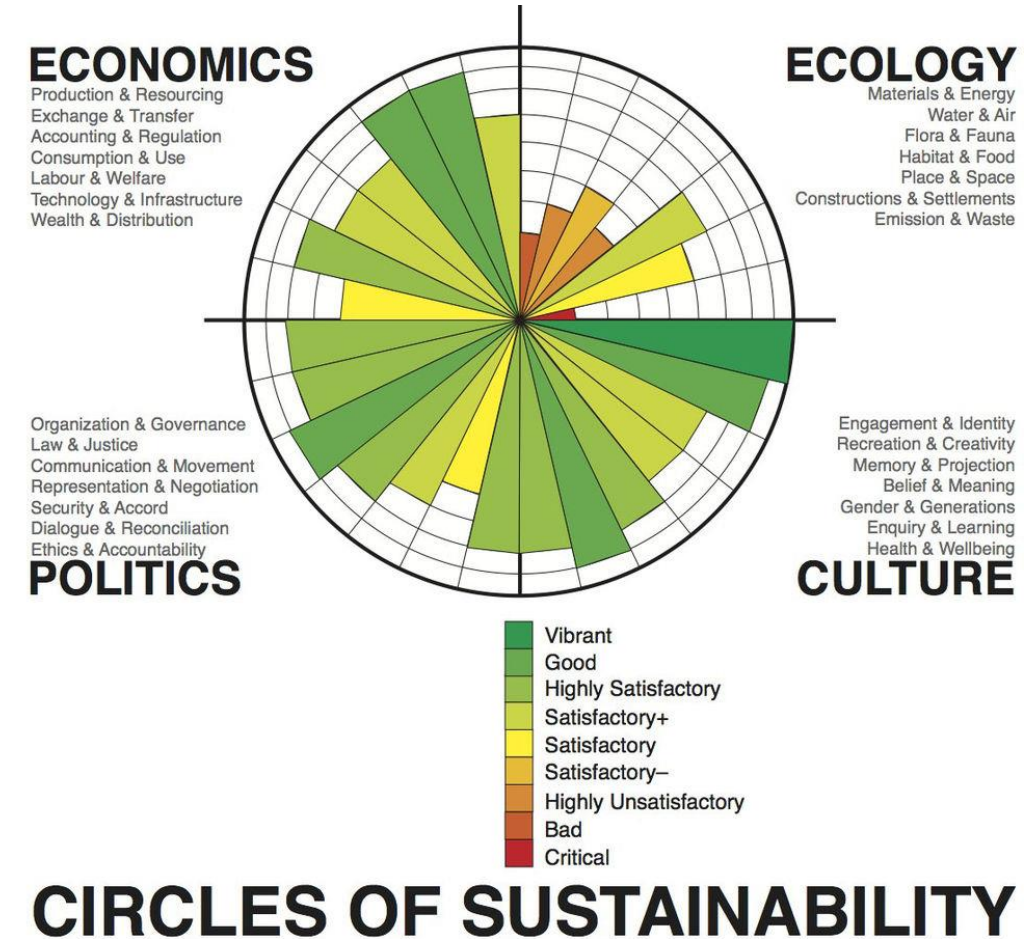
[1] House of Commons, Health and Social Care, and Science and Technology Committees, Coronavirus: lessons learned to date, Sixth Report of the Health and Social Care Committee and Third Report of the Science and Technology Committee of Session 2021–22, <https://t.co/2bAeVN4xqw?amp=1>

By [GTSO-Couperin](#), [CC BY 4.0](#), via Wikimedia Commons



# Circles of sustainability [2]

- United Nations proposed in 2008 the use of an approach based on “engaged theory”.
- “Circles of sustainability” is a method for managing projects aiming at a socially sustainable outcome.
- The circular figure is divided into four sectors: ecology, economics, politics and culture.
- Each of these four sectors is divided into seven subsectors.
- The sustainability of each of the 28 subsectors is evaluated over a scale of 9 marks, ranging from “critical sustainability” to “vibrant sustainability”.



[1] James, P. (2014). Urban sustainability in theory and practice: circles of sustainability. Routledge.

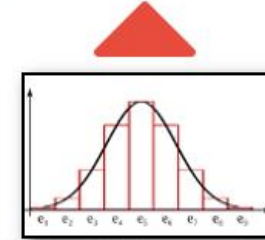


# Technical design: “Bottom-up” approach [3]

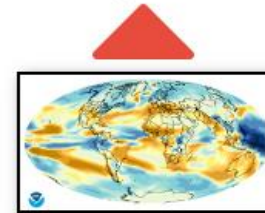
1. Risk assessment in the current conditions.
2. Design of adaptation procedures to cope with the actual risk.
3. Resilience assessment of the designed solutions with respect to technical scenario of future climate and other types of information.
4. Identification of resilient and no-regret solutions.

## Bottom-Up approach

No-regret and resilient solutions



Additional information for  
assessing future risk



Technical scenarios of future  
climate for resilience assessment



Design of solutions



Risk assessment in current  
conditions

# Conclusions

- Current time offers unprecedented opportunities. We are entering into a new period of global communication and cooperation. To be inclusive is possible.
- Open data, open science and open education are essential ingredients.
- Academies and research institution should recognise knowledge transfer and dialogue with stakeholders.
- Sustainability requires a constructive, positive and solution oriented approaches.

**Thank you.**

